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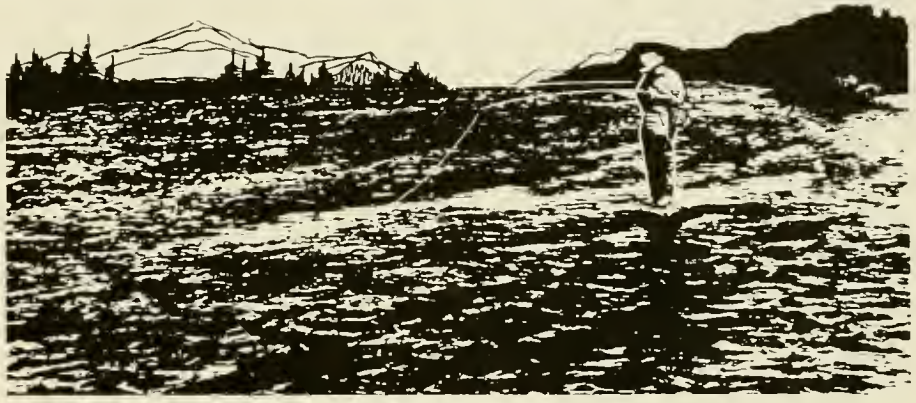
Volume I No. 10 MONTANA FISH AND GAME DEPARTMENT October, 1966

WHAT PRICE A RIVER

By Doctor L. G. Hammer

Following is a copy of a presentation given during the "Trout Unlimited" national meeting in Butte, Sept. 23 and 24. The speech was prepared by Doctor L. G. Hammer of Butte, Montana, but presented by the "Trout Unlimited" president, Martin Bovey, in the absence of Doctor Hammer.



I make no claims to complete originality in this paper. I shall draw heavily on statements made by Dr. Roland Renne, Director of the Office of Water Resources Research, Department of the Interior, at the annual meeting of the Montana State Rural Areas Development committee, February 16, 1966.

In an area as sparsely settled as Montana and as far from the heavily populated distribtuion and industrial areas, where can we get the best return in real dollars for an acre foot of water? Is it from municipal use? Hydroelectric power generation? From Agriculture? Recreation?

Municipal water brings by far the highest rates, but this presupposes humans in large numbers, and that is one doubtful blessing that Montana has not got. And Montana industry needs relatively little water at the present time.

How about using it to generate power?

As of August, 1965, the larger coal-fired generating plants were producing power for about 3-4 mills per kilowatt hour. Estimates of power costs, from the proposed Bridge Canyon Dam on the Colorado, are about 6 mills per kilowatt hour for peaking power and 3-4 mills for firm power. At first glance it would seem as though power generated by water would compare favorably in cost, but even higher construction costs are steadily increasing the cost of the federal hydro-electric kilowatt hour, while recent advances in technology are decreasing the cost of the kilowatt hour from coal-fired generating units. We have a plentiful supply of shallow coal in eastern Montana, so the choice is against dams.

And, by the year 2000 or earlier, we are most likely to have nuclear power, which could be even cheaper than power from coal.

How about using the water for agriculture? We are certainly agriculturally oriented here in the Treasure State but let's look at some simple figures.

Dr. Renne states that 1,000 gallons of water used for irrigation in Iowa gives a return of 94 cents, in Colorado 23 cents but in Montana a paltry 13 cents. The shorter growing season and the less fertile soil of our high altitude country is the reason for the vast difference.

Experts predict food shortage between 1970-2000. Will water impounded in Montana be used for 1 or 2 more hay crops a year or sent downstream where it can be used to produce 7 or 8 vegetable crops a year. Logic says downstream, so Montana becomes a high storage reservoir.

But now note this: Dr. Renne also states that water used for recreation in Montana and similar areas returns 12 times as much as does water used for agriculture. I think this bears repeating: For every dollar that agriculture will return to us for the use of our water, recreation will return twelve. The choice here is obvious.

Recreation is currently a 60 to 90 million dollar industry in Montana, and Dr. Renne believes that with proper development our income from recreation can be increased three to ten fold in the next ten to fifteen years. So he is talking about an income of some

300 million to a billion dollars a year in the quite near future, and this, if past history means anything, with a very modest investment. Let me quote directly from Dr. Renne: "Obviously, if Montana is to increase its income productivity, it must continue to improve the efficiency of its agriculture, but, more important, it must make profitable use of more of its unused water supplies by other, higher value uses."

How do we go about putting our water to the more profitable recreational use so that we may increase our State income, preserve our natural resources and still not jeoparadize other uses?

I might facetiously say, "Let the Bureau of Reclamation give me the 80 plus millions of dollars they propose to spend on the Reichle Dam complex on the Big Hole River and in the Jefferson-Whitehall area, and I will create a veritable recreation paradise in Montana.

But seriously, on the national level, we should, I think, make every effort to back the Wild Rivers legislation and declare a moratorium on dam building on high recreational value streams until some knowledgeable body . . . a Water Resources Council, if you will . . . thoroughly and impartially examine the pros and cons of such projects with special attention to the relative advantages of fossil fuel, water power and nuclear energy and the return on investment in recreation versus agriculture, all in the light of present and future needs and of modern and future technology.

At the state level we should endorse and try to implement the proposed State Recreational Waterways System and try to integrate it with existing laws and uses. In view of our Montana water law of "First in use . . . first in right", I would like to see recreation and fisheries declared a beneficial use of water. This declaration would (1) put our water to its most profitable present use, (2) protect our state interests from downstream depredations, and (3) give the State Fish and Game Department a necessary tool to improve sport fisheries. **And bear this in mind, recreation is not a consumptive** use and therefore does not decrease the available streamflow to downstream users.

In the light of all this it would seem that the sensible attitude toward the Big Hole could be summed up in three words: "Leave it alone." Montana will be the richer if we do just that.

Most of the people of Montana are justly proud of their state's superb free-flowing rivers and the fish and wildlife that inhabit them. Every single year countless topgrade, well-heeled anglers come from all over the country . . . from California and Arizona and Texas, from Minnesota and Massachusetts and Pennsylvania and New York . . . to fish the Big Hole. These men and women would not drive five miles to fish a reservoir. Year after year as more and more of our nation's free-flowing streams are destroyed, fishermen will come in ever greater numbers to fish a river such as the Big Hole. Every year they will leave more and more money in the coffers of western Montana restaurants, motels, gas stations and sporting goods stores until Dr. Renne's rosy prediction will one day prove true. To quote Dr. Renne again, "Montana has distinctive beauty. It's precipitation makes possible high demand water-based recreation in the spring, summer, and early fall months. . . fishing, boating, swimming, caming, water skiing, etc.; in the late fall . . . hunting of waterfowl, upland birds, and big game; and in the winter months, skiing and related sports."

Cold economics suggest that the Big Hole will bring the maximum return to the Treasure State if preserved as one of our country's greatest free-flowing trout streams.

Reclamation can always build a dam and reservoir, but never a lovely river.

COMPARISON OF PRIVILEGE FEES FOR VARIOUS KINDS OF RECREATION

Spectator Type	Duration	Fee
Motion Picture	2 to 3 hrs.	$1.00 to 2.50
Football Game	2½ hrs	2.50 to 5.50
Basketball Game	2 hrs.	1.50 to 3.00
Baseball Game	2½ hrs.	1.50 to 2.00
Ice Hockey Game	2 hrs.	1.50 to 3.50
Indoor Track Meet	3 hrs.	2.00 to 4.00
Participation Type		
Golf (18 holes)	4 hrs.	3.00 to 5.00
Boat Rental (14′ w/o motor)	8 hrs.	4.00
Bowling (3 lines)	1 hr.	1.50
Skiing		
Rope Tow	Day	2.50
Chair Lift	Day	5.00
Fishing	Day	1.00
Overnight Camping (State Parks)	Day	1.00 to 1.50
Fishing	Year	4.00
Hunting	Year	4.00
Hunting (Shooting Preserve)	Day	5.00 per bird av.
Camping (Selected For. Serv. Areas)	Year	7.00 (car)
Camping (Selected For. Serv. Areas)	Day	.50 per person

OUTDOOR RECREATION ADVISORY & PLANNING COMM. MEETS

Meeting in Helena on October 14 was the Outdoor Recreation Advisory and Planning Committee, a committee created by Senate Bill 100 of the 1965 Legislative session. This was the first meeting of the 15 member committee appointed by Governor Babcock to serve as an advisory and consulting group in administering the Land and Water Conservation Funds Act. The Montana Fish and Game Commission is the final state authority charged with administering the program which makes use of federal funds available through the Bureau of Outdoor Recreation under the Federal Land and Water Conservation Act.

Wesley Woodgerd, Chief of the Recreation and Parks Division, Montana Fish and Game Department, briefed the panel on the de-

L-R Standing: Representative John Delano, Helena, Chairman; Ian Elliot, Bozeman; Robert Sykes, Kalispell; Wesley Woodgerd, Helena; Dick Setterstrom, Butte; Don Aldrich, Missoula; Jim Bourne, Billings. L-R Seated: Mrs. Jeanette Thorton, secretary to W. Woodgerd; Mrs. Oscar Hippe, Froid; Mrs. John Casey, Helena, Vice Chairman; Mrs. Hubert Bell, Kalispell. Absent members were Mrs. Norma Ashby, Great Falls; Orville Gray, Kalispell; Roy O. Johnson, Glasgow; L. D. McFadden, Havre, and O. M. Ueland, Butte.

partment's state-wide outdoor recreation plan. The committee was advised of county and city participation in the program. Priority guide lines for city-county projects as established by the Fish and Game Commission were reviewed and approved by the committee. Since most Montana recreation projects are water-oriented, the group discussed at length the need for adequate water conservation practices, and the need for recreation to be recognized as a legal and legitimate use of water.

USE OF FERTILIZER ON GAME RANGES

Some 20 miles south of Ennis, Montana the near 6,500 acre "Madison-Wall Creek Game Range" sprawls to the west of the Madison River. The lower, eastern area, predominately benchland, slopes gradually at first and then steeply into foothills of the Gravelly Mountains. Most of this land was purchased during 1959 and other acreage was leased primarily as an area where elk could winter without causing problems for private landowners.

Since acquisition of the range in 1959, fish and game personnel have made it a point to determine to what extent elk have used the range and which parts of the range are being used most heavily. Elk feed over parts of the benchlands of the range during the more severe winter. They also use northern slopes and ridges during severe winter, but the southern exposures take the brunt of use, regardless of the kind of winter. Even after the snow has pretty well waned and other areas open up, elk have hung onto key southerly exposed slopes into late March and April.

Probably the elk stay on these south slopes after other areas have bared off because the slopes green up earlier than surrounding range and thereby offer more tasty green forage. This is quite an attraction to critters that have had to grind dried forage all winter.

The problem is: how to pull the elk off the heavily-used southern exposures and relieve the grazing pressure on them as much as possible, especially during the spring when things are just greening up. It appears that a way to draw elk away from their greening slopes would be to offer other early green pastures on nearby land. The feeding habits of elk are deep set, though, and biologists emphasize that an attempt to change their wintering habits is strictly experimental. It is possible that even greener pastures won't pull them away from their favored haunts.

A brome hayfield surrounded by native grasslands lies near the higher, southern slopes. Game workers considered that fertilizing and mowing of these nearby pastures and rangelands might just green the areas up earlier in the spring and make them more attractive to elk. Thus, the game would be tempted to leave the overused slopes earlier in the year.

An area between "English George" and "Hyde Creeks" was used for the trial. It consists of about 90 acres of brome grass hayfield and some 10 acres of adjacent grasslands. Plots were marked and fertilizer was applied in varying quantities and mixtures over certain portions of the study

plot. Nitrogen and phosphorous-bearing fertilizers were first applied during October of 1963 to take advantage of late fall and winter moisture. Production and use of vegetation on the study area was determined and nitrogen was again applied during the fall of 1964.

As expected, overall forage production increased where fertilizers were used. Areas which were mowed on hayfields during the fall also outproduced similar sites which were unmowed.

Vegetation from some of the plots has been chemically analyzed to determine if there could be an association between nitrogen fertilizer and palatibility of effected forage. Since an important part of the study is to ascertain the residual effects of the fertilizer, there will be repeated chemical analysis as the study continues. The preference and production of forage will be viewed in relations to the use of fertilizers.

It should be pointed out that the experiment began almost at scratch, for practically nothing is known about the use of fertilizers on game ranges. In fact, there is little knowledge of its results even on domestic stock ranges.

There are many factors involved in evaluating the effects of the fertilizer. These range from variations in weather and the effects on game distribution, especially snow depths, to differing amounts of moisture during growing seasons. During the progress of the experiment there have been great variations in weather conditions including an extremely dry summer and a very mild winter. The results due to these variations can only be overcome by continuing the observation on the experiment over a few more years. The project simply has not run long enough to offer positive direction regarding the use of artificial fertilizer on game ranges. To date, the distribution patterns of the elk have not been altered to any appreciable degree.

One thing game workers are sure of, now that they have their feet wet, there's a lot to be learned about the use of fertilizers before they can be effectively used as a game management tool. Fertilizers are expensive. On the study project it cost about $20.00 per acre just for the fertilizer alone. Over rough terrain it would take several dollars more per acre just to get the stuff on the land. Simple economics would preclude wide scale and haphazard application. If applicable at all, fertilizers will necessarily be used in special situations and on a limited scale, especially if the effects of the chemicals are short-lived. The cost and return ratios which may apply to the use of fertilizers on agricultural croplands couldn't be used on game ranges by any stretch of the imagination.

One thing for certain, there is no substitute initially for getting a game population into balance with their range **before** any rehabilitation project is started. If there are too many animals to begin with, any improvement in range will quickly be eaten up by the oversupply of game present. Fertilizing is therefore only an attempt to **assist** or hasten along a process of range recovery provided the big game population is at a level which will allow range recovery.

The Wall Creek studies will continue so that eventually game managers will have some facts at hand which they may use to appraise the application of fertilizer as a game management tool.

IS IT A TROPHY?

Will the antlers on the "mulie" buck across the canyon make the "Boone and Crockett Records"? Is it a large deer with only ordinary size antlers, or is it a smaller deer with a record rack?

To judge the spread or width of antlers they must be compared with some known dimension on the animal. Ear length and width of the head become almost standard after a mule deer or an elk is over a year old.

Very often, bucks or bull elk carry their ears in a horizontal position. In this position, the distance from the tip of one ear to the tip of the other is just about 24 inches on mule deer and about 26 inches on a bull elk. If the animal in question has antlers which are about three inches wider than the ears, the spread is about 30 inches on a mule deer and 32 inches on a bull elk.

Antler spread is not the only measurement used in judging for the record books. Symmetry is of importance also as is the heaviness, or thickness of antlers. Missing tines on one side reduces the total score, so look him over carefully. Look for spread, number of points, symmetry, and thickness of antlers.

HERE'S HOW IT WAS SON

This article is reprinted from the July-August, 1966 issue of "The Conservation Volunteer," a Minnesota Department of Conservation publication. The author, Mr. Cook, is editor of the "Lyon County Independent," a newspaper published at Marshall, Minnesota.

In this autumn of diminished pheasant and duck populations, not only in Minnesota, but in both Dakotas and Nebraska as well, it was inevitable that state conservation departments would get their lumps from indignant citizens who oppose opening of hunting seasons.

I know Minnesota's department has been blasted by newspaper editors and by citizens who write letters to editors. I am sure departments in other states also have been chewed out.

Well, this is one nice thing about living in the United States. If you don't like what your officials are doing you can tell them so. And if YOU don't want to tell them you can get your newspaper to tell them for you.

Of course, on the other hand, if you DO approve of what those officials are doing you can tell them that, too. It is true that this isn't done as often or with as much fervor as the criticism.

Normally, in most cases, I feel game and fish managers and officials do a good job. I think that way for several reasons:

1. They are trained and experienced in their profession, and they have no personal axes to grind, no commercial interests to influence them. This is not always true in the case of, just for example, the editor of a newspaper who may be swayed by the opinions of advertisers, although perhaps not by actual pressures applied. And don't tell me it doesn't happen. I've been around newspapers too long to accept any arguments to the contrary.

2. The professionals view a much broader picture than just one season and just one small area. They are charged with responsibility for the future as well as the present, and with their developments in the entire state rather than just one county.

3. Their jobs depend on the continued good health and prosperity of the species they manage and it does not appear likely to me that they would jeopardize their own futures by destroying the very resources those futures depend on.

4. Game and fish managers do not operate on the basis of popular myths perpetuated by "old-timers", sentimentalists and certain segments of the citizenry who are supposed to know what's going on—but very often don't. Game and fish people operate out of knowledge gained by study, research and experience, both in the laboratory and in the field.

Still there are a great many people who are convinced that any species that has come on hard times has done so because of the stupidity, obstinance, contrariness and general ineptitude and mismanagement of the game and fish people.

It is perfectly okay for citizens to hold that conviction, and to say so. I don't believe it is so okay for critics to take the hide off game and fish people with allegations that are not true.

I mentioned some popular "myths" that are cherished by many citizens. One of those contends that gun pressure is one of the chief governing factors in populations of game birds and animals. That one has been proved untrue in so many instances that even some of the believers have become only "half-believers."

Another myth is the one that holds it is the farmers who are "raising" the pheasants in this and other areas. It is true that the birds nest and live and feed on farmlands. Where else is there? But it is also true that agricultural practices employed by farmers are the principal villains in the predicament the pheasants now find themselves.

Don't get me wrong, for Pete's sake! I have a great many friends on farms and I don't want them sore at me. I know that modern farming demands practices that were not necessary a number of years ago. I also know that only a comparatively few farmers employ the conservation practices they COULD use to help the birds.

I am no expert. But I know that fields plowed or burned right up to the gravel on township and some county roads do not help birds survive a winter. I know that fields plowed right up to the fencerows are not conducive to pheasant production. I know that draining of sloughs and low-lying areas to put more land into crop production does not encourage game production. I know that modern harvesting methods do not leave much in the fields for winter feed, as was the case, say, 20 years ago when methods were not as efficient and fast as they are now.

I know that these examples of progress in agriculture have been necessary, and that more will be necessary.

I also know that those factors, plus weather over which even the game department has no control, are the "bad guys" in the pheasant decline. And I do not believe it is either fair or intelligent to put the monkey on the back of the conservation department.

I read an editorial not long ago in which the writer took some cuts at the game department. In his closing paragraph he wrote: "Drastic measures must be taken if our children are going to get

any hunting. How will you feel and explain to your young son as he looks up at you after hunting all day without seeing a single-game-bird and says: "Golly, Dad, you keep telling me about all the ducks and pheasants you shot back in the 50's and 60's. . . Why didn't you save a few for me?"

That's a good question. How **ARE** you going to explain to your son?

Well, I'll tell you how I am NOT going to tell him the birds disappeared because the game department opened seasons when they shouldn't have, or because the conservation department was run by a b u n c h of knotheads, and amateurs who wouldn't listen to all the people who knew all the answers—or thought they did.

And I'll tell YOU what I am going to tell HIM, if it becomes necessary. I am going to tell him that the pheasants are gone because their homes were destroyed, and because their sources of feed were taken over for the use of people, and because their winter shelters were cut down or plowed under or burned out or drained out.

And I'll tell him that weather conditions helped destroy them, conditions the birds might have survived if other factors had been in their favor—but weren't.

And if he asks about where all the ducks went I am going to tell him about the thousands of acres of swamps and sloughs and nesting areas that were put under cultivation, and about the thousands of acres that were drained and were NEVER put into cultivation.

And I'm going to tell him about the pollution of waters by cities and industrial plants which destroyed the ducks' resting and feeding areas.

And I'll tell him it was NOT the gunners out in the wheat stubble, just before sunset, when the feeding flocks came out and buzzed the fields like swarms of locusts and so hungry and unafraid a hunter could just lie out on his back and have birds all around him.

And I'll even tell him it was not the market hunters in Mexico or the "game hogs" in Louisiana who decimated the flocks, even though that was another popular myth in the 1960's.

I'll be very careful about what I tell my son when he asks why I didn't "save some for him."

Because I want him to know the truth about what happened to the pheasants and the ducks—and the prairie chickens and the ruffed grouse.

Just as I wanted to know the truth about what happened to the buffalo and the grizzly bear and the lobo wolf and the passenger pigeon and the heath hen.

And what is happening, right now, to the pronghorn antelope in Wyoming and other antelope ranges of the west.

I agree that drastic measures must be taken if our children are to have any hunting. But the drastic measures must not be limited to cussing out the game and fish division, or petitioning for closed seasons every time a species gets down a little, or by refusing to buy a hunting license.

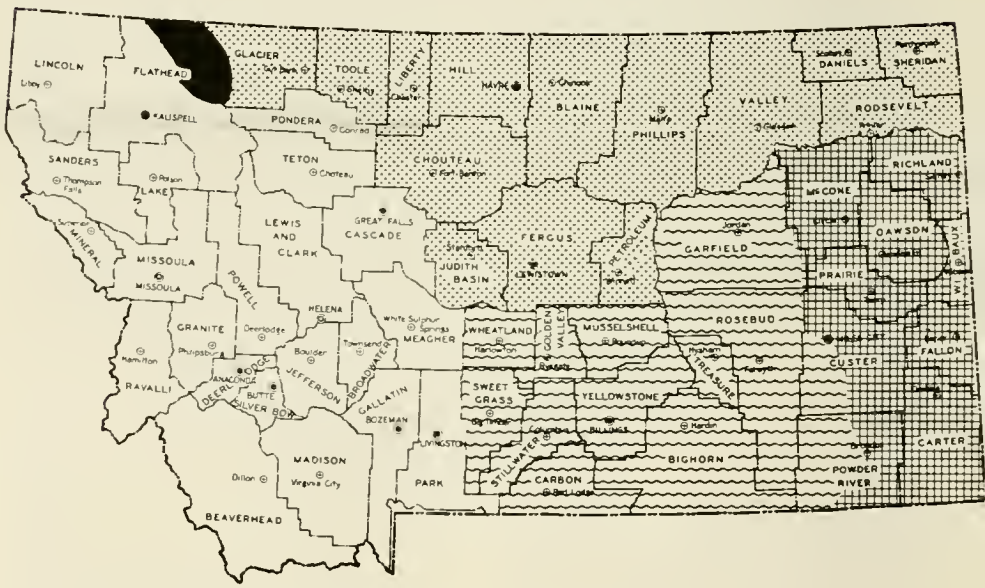
The drastic measures must start right where the game starts—on the land. More and better habitat must be left by the stewards of the land where the game HAS TO live. Farmers would have to become more conservation-minded than they have been in the past or are now. More wetlands would have to be saved from the dragline and the ditching machine. Wetlands that have b e e n "reclaimed" would have to be put back into production of the game.

This would not be done in a year or two. And it MIGHT not ever be done at all. And it will NEVER be done just by closing hunting seasons.

But until it IS done, the pheasants and the ducks are not going to come back and our kids may not have any hunting.

But if we have to explain WHY there is no hunting, let's tell them the truth.

1966 HUNTING REGULATIONS FOR RING-NECKED PHEASANTS



Ring-necked Pheasant Regulations

	Oct. 30(Noon)- Nov. 6	3 either-sex, poss. 6 either-sex
	Oct. 30(Noon)- Nov. 27	3 either-sex, poss. 6 either-sex
	Oct. 30(Noon)- Nov. 27	3 - one of which may be a hen, poss. 6, two of which may be hens
	Oct. 30(Noon)- Nov. 27	3 cocks, poss. 6 cocks

SHOOTING HOURS: Shooting hours will begin at noon on opening day and close at sunset. Shooting hours thereafter shall be from one half hour before sunrise to sunset.

AREAS CLOSED TO HUNTING: All State Game Preserves

MEANS OF TAKING: Ring-necked pheasants may be taken with a shotgun no larger than a ten gauge, or long bow and arrow.

BANNACK STATE MONUMENT

"Excitement rules the hour. Plummer, Stinson and N. Ray were hung last night by the Vigilante Committee. They were found to be members of the gang of road agents."

"Today a Mexican (Pizanthia) was shot, hung and burnt. Couply is dangerously wounded, Smith and Bell slightly. They were shot by the Mexican when they went to arrest him." "Pleasant day with the exception of drifting snow."

Such was life in Bannack in January of 1864, and so went the diary of Henry Pond who was in Bannack the day after the Vigilantes caught up with Henry Plummer and some of his cohorts. Living was an interesting affair in those days.

Times have changed, however, and today Bannack plays host to many thousands of visitors and travelers that trod the dusty boards and trails of that once lusty and thriving community.

Not to mention the fact that Bannack was the first Territorial Capital of Montana, it got its start way back in 1862 when gold was discovered on Willard Creek, now known as Grasshopper Creek. The discovery was made on what is known as White's Bar, some two and one-half miles below the site of Bannack. By the close of 1862 some 400 to 500 people had located on Grasshopper Creek with the majority located in and around Bannack where the largest and richest placer areas were discovered.

The bill organizing Montana Territory passed both houses of Congress on May 24, 1864, and two days later was signed by President Lincoln and the commonwealth was admitted to the union. Its boundaries were fixed by the act and the President commissioned Judge Sidney Edgerton as Governor on June 22, 1864. The first session of the Territorial Legislature was convened on December 12, 1864 by Governor Edgerton in Bannack.

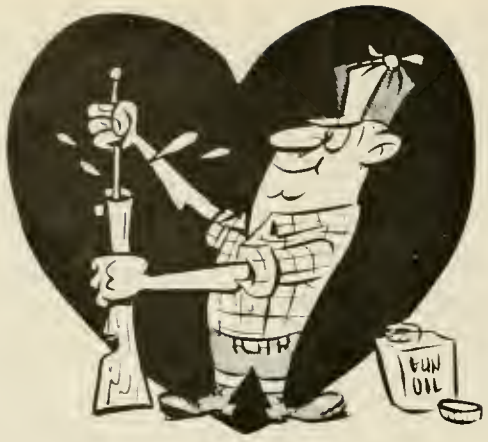
The gold rush at Bannack proved to be of short duration. The discovery of richer sources of gold at Alder Gulch near the town of Virginia City quickly emptied the camp at Bannack as the miners rushed to the new "El Dorado." For 2 or 3 years Grasshopper Creek and Bannack were almost deserted.

Empty rooms stare from gaunt buildings into the sage-fringed streets of Montana's first Territorial Capital.

During the intervening years the activity in Bannack has waxed and waned—most ly waned. By the late 1940's and early 1950's it had reached ghost town proportions. Realizing that something should be done and someone ought to do it, interested members of the Beaverhead Museum raised funds and purchased most of the buildings in Bannack. These buildings were turned over to the State Parks Division of the State Highway Commission in 1954, and Bannack assumed its place as a member of the state park system, Bannack State Monument.

Bannack still retains much of the atmosphere of a frontier mining camp. Most of the buildings are of frame and log construction. The old jail at Bannack still stands. It is a strong wooden building with a sod roof, a dirt floor, small barred windows and tiny individual cells. The church that "Brother Van" started is still in existence, as are the old school, the hotel, along with many other structures that retain the flavor of a frontier mining camp.

A trip to Bannack is interesting and will be well worth an hour or so of your time whenever you make your next visit to Beaverhead County. The latch string is always out and you will be most welcome.



Take as good care of your heart as you do of your gun!

AMERICAN HEART ASSOCIATION

Heart SAFETY Rules

Check with your doctor on your physical condition. Keep fit the year round. This includes watching your weight.

Plan your hunt. Allow time to adjust to the altitude. Know the location of the nearest phone, doctor, ranger station or Fish and Game department men.

Take plenty of short rests. Avoid unnecessary exertion.

Hunt at a steady, unhurried pace. Don't strain yourself in emergencies. Get your partner to help.

Keep an eye on the weather. Don't try to do as much in hot, humid weather as in cool weather. Don't try to do as much at 50 as you did at 25.

Eat moderately. Take a rest or nap after each meal.

Plan your camp routine to eliminate unnecessary work. Work at a steady pace that suits you. Don't strain yourself. Get help for heavy jobs.

Higher altitudes may lower your tolerance to alcohol. Limit your drinking.

The hunter with a known heart condition should make sure that at least one member of the party knows of his condition, what medicine he takes and how administered. *He should never hunt alone.*

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MONTANA FISH AND GAME DEPARTMENT

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